

## ABSTRACT

A method of fabricating a zirconium alloy flat product, the method being characterized by: preparing or casting a zirconium alloy ingot containing at least 95% by weight of zirconium, and including the usual impurities and alloying elements; shaping said ingot in order to obtain a flat product; subjecting said flat product to a  $\beta$  quenching operation under conditions that are determined to obtain within the flat product an acicular structure at the end of said  $\beta$  quenching; subjecting said flat product, after the  $\beta$  quenching, to a rolling operation performed in a single rolling sequence without intermediate annealing, said rolling being performed at a temperature lying in the range ambient to 200°C, and having a reduction ratio lying in the range 2% to 20%; and subjecting said rolled flat product to an annealing treatment in the  $\alpha$  range or in the  $\alpha + \beta$  range, performed in the temperature range 500°C to 800°C for 2 minutes to 10 hours. A zirconium alloy flat product as obtained by the method, and a fuel assembly element for a power station nuclear reactor obtained by shaping the product.